Roland
Systems Group

RSS by Roland

Digital Consoles

Digital Snakes

A New Age in

Live Digital Audio Production

An Introduction to the V-Mixing System

Personal Mixers

Recording

Why do you need a digital audio production system?

This handbook is intended to explain why people have turned to digital audio solutions for live sound and to specifically show the system that RSS by Roland delivers.

Benefits of a Digital Sound System

The V-Mixing System from RSS has been designed to improve sound quality, reduce configuration complexity, add breakthrough capabilities and reduce costs - all while making the job of mixing live sound easier.

A System Concept

The V-Mixing System uses REAC (Roland Ethernet Audio Communication) to connect all components with lightweight and affordable Cat5e Ethernet cables.
The individual components in the V-Mixing System are some of the best in the industry on their own but they are designed to work even better as part of a system, communicating with each other via REAC.
This system connection approach brings superior sound quality, is easy to learn, easy to use and brings all the powerful benefits of a digital solution.

Superior Sound Quality

The V-Mixing System delivers superior sound quality starting right at the source. The RSS Digital Snake puts pristine Mic/Line preamps on the stage, close to the original sound source. Then the true sound of the source is carried by REAC to other parts of the V-Mixing System at a full 24bit digital audio depth.
In a typical analog sound system audio is sent over cables that are susceptible to sound quality degradation including loss of high frequencies. There is also the possibility of ground loop hums and other electronic interference that comes from outside sources such as lighting systems. The longer the run and the more connections made, the higher the chance of sound quality issues.
The digital audio signal sent by REAC over Cat5e Ethernet cables avoids signal quality losses, ground hum, or other interference common on analog snake connections.
The RSS V-Mixer has a complete set of built-in effects processors, further avoiding analog connections to other outboard devices.
Sometimes sound sources need to be "split" and sent to multiple locations in addition to the Main speakers - to monitors, to a recording system, to a broadcast feed or to a webcast. In the analog world this requires large, bulky transformer-based splitters that are expensive. By using a simple Ethernet switch, REAC delivers the full digital sound to all splits, including the REAC Recording System, the RSS Personal Mixing System or other monitor positions.
The result of all these benefits is a noticeable improvement in sound quality over other systems. That superior sound quality can be heard at any output from the system: on the main speakers, in monitors, in recordings or in a broadcast signal.

Easy to Use, Easy to Learn

Connecting all devices in an integrated system makes the V-Mixing System easier to use. Devices are automatically recognized by the system and the appropriate menus present themselves. Dedicated knobs and buttons eliminate any confusion when having to make quick adjustments. Full recall makes sound more consistent from week to week or from one event to another. Factory libraries make it easy to set EQ, compressors and other dynamics for every channel.
A dedicated Help button on the V-Mixer is ready to give you answers on each part of the system. No other system brings all this flexibility and power in an easy to use manner.

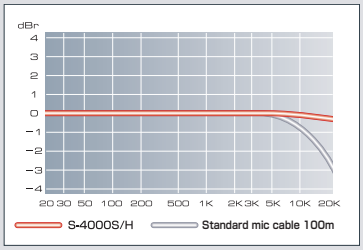
Powerful Digital Benefits

One of the most exciting functions driving sound operators to step up to digital mixing is the ability to store and recall settings. When you rehearse with a band, simply store the settings from rehearsal and recall them from digital memory for the performance.
This valuable recall function is now common on digital mixers, however, the V-Mixing System extends digital recall beyond just the mixer to the entire system via REAC.
An RSS V-Mixer has an extensive array of effects processors. Multiple racks of outboard processing devices are eliminated because – the mixer has them built right in. This reduces learning complexity by putting all effects into the same user interface as the mixer. It also puts effects under reliable system-wide recall as well as providing some significant cost savings.
The REAC system delivers easy and affordable multichannel recording – simply connect a Cat5e cable from the V-Mixer to the gigabit ethernet port on a PC and capture up to 40 channels of live audio at any event. Use Cakewalk's SONAR recording software for full editing, post-production, publishing and delivery to DVD, CD or the web.

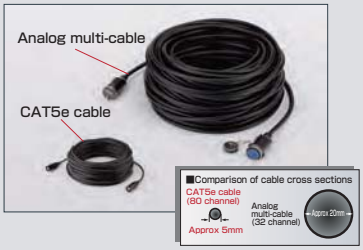
REAC

Roland Etherhet Audio Communication

REAC transfers 40 Channels of Audio in each direction at 24-bit up to 96KHz including control messages all over a single Cat5e Ethernet Cable or Optical link.



If you compare the long distance transmission of signals with REAC versus analog cables, REAC can transmit much greater quantities of data without a significant loss of high end frequencies.



One CAT5e cable enables transmission of 80 channels (40 in / 40 out). Compare that to a single analog multi-cable and you can appreciate the ease of set up. The substantial savings on cable and conduit costs alone is very attractive.

The RSS V-Mixing System

A powerful live audio production solution built on four components.

Digital Consoles

The cornerstone of the V-Mixing System is the M-400 V-Mixer - a live digital mixing console. This compact/lightweight unit provides 48 channels of mixing, 16 AUX buses plus Main L/R/C outputs and 8 matrices. This is an all-in-one design featuring digital effects processors, on-board recording via USB memory drive and instant recall with motorized faders all with easy and intuitive operation.

Digital Snakes

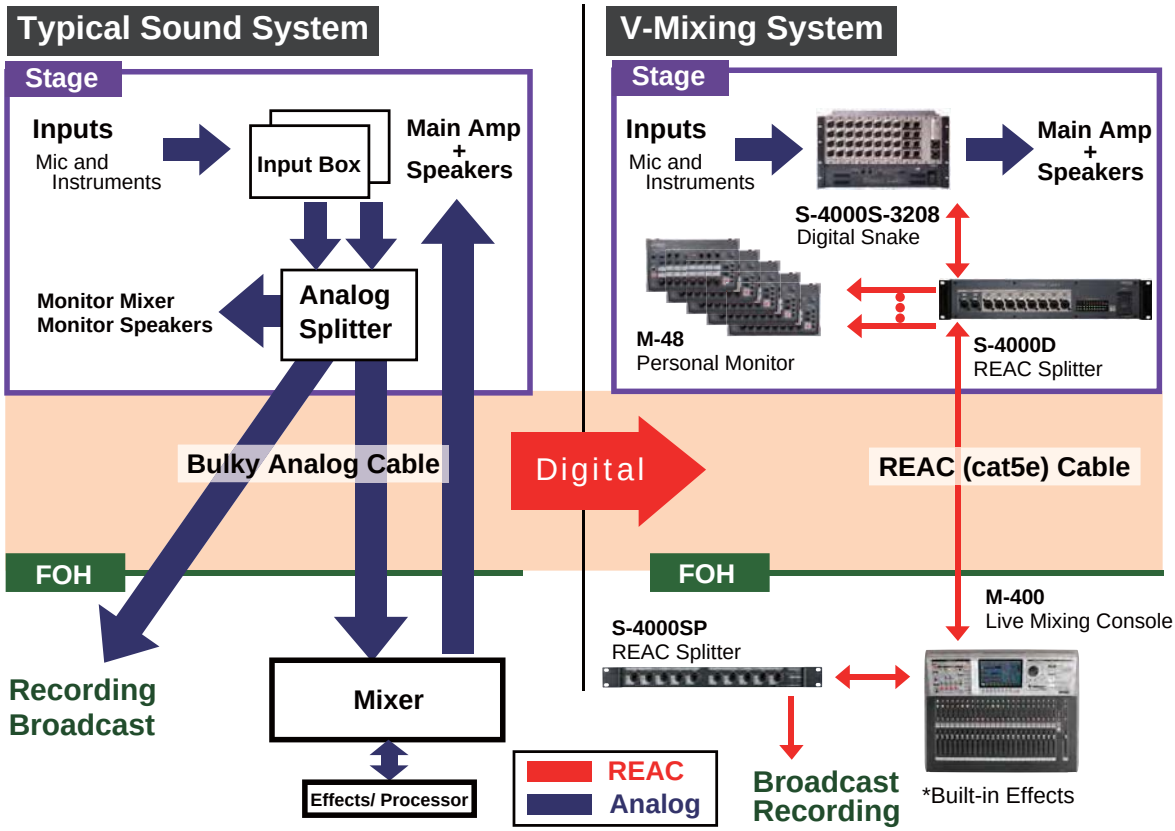
Digital snakes couple high quality preamps with REAC technology enabling source signals to maintain pristine sound through the entire V-Mixing System. RSS Digital Snakes are immune to hums, buzzes and general impedance and capacitive losses that plague analog snakes and systems. Enjoy superior clear sound, great intelligibility with minimum latency and the freedom to split or extend your audio sources anywhere.

Personal Mixers

The M-48 is the "next generation" live personal mixer that offers each musician the flexibly to control exactly what they want to listen to during their performances. It provides the highest level of sound monitoring quality for both headphones and IEMs (In-Ear Monitors) as well as for wedge and powered monitors. The superb sound quality creates the ideal monitoring environment for live performance and recording as well as studio applications.

Recording

Cakewalk's SONAR, when used in conjunction with REAC, provides the most comprehensive blend of live multi-channel recording with post-production functions such as mixing, mastering and delivery. Capture up to 40 channels of audio directly into SONAR all via a simple Cat5e cable connected to the network port on a PC.



RSS Digital Snake - Flexible Audio Transmission & High Sound Quality

The RSS Digital Snake improves sound quality and adds convenience in various audio environments, including fixed installations and portable applications.

Perfect for Your Environment

The Digital Snake is perfect for all live sound venues including performance theatres, churches, conference halls, school auditoriums, and large stadiums.
The convenience and professional sound quality of the Digital Snake also make it popular for use in many TV and radio production studios, remote sporting broadcasts, and film sets.

REAC Technology

The Digital Snake uses REAC (Roland Ethernet Audio Communication) to send audio over a Cat5e Ethernet cable. Since Cat5e cable is very lightweight and inexpensive it is much easier and more cost effective to place in permanent installations. For staging/rental and touring sound companies, the advantages of carrying a 7lb (3kg) 80-channel snake over the typical weight of an analog snake are easy to imagine!

Improvements in Intelligibility and Sound Quality

In a typical analog sound system audio is sent over cables that are susceptible to sound quality degradation including loss of high frequencies. There is also the possibility of ground loop hums and other electrical interference.
The longer the wire or the more connections made, the higher the chance of sound quality problems on any analog connection.
The digital audio signal sent by REAC over Cat5 Ethernet cables avoids signal quality losses, ground hum, or other interference common on analog snake connections. REAC delivers clean sound, either at the FOH position or even when the audio is split to multiple locations. This improvement in audio quality is significant, especially when the distances are over 200 feet (60m).

Remote Preamps with High Quality Sound

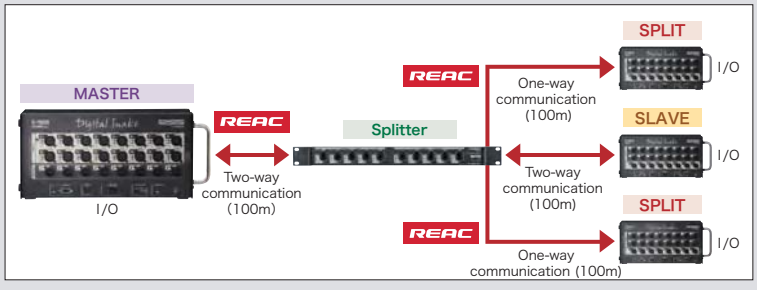
The superior sound quality of RSS Digital Snake starts by capturing the sound right from the source. The RSS Digital Snake puts pristine Mic/Line preamps on the stage, close to the original sound source. The sound is immediately converted to a 24bit/96KHz signal to be sent by REAC.
The preamps gain, PAD and phantom power can be controlled from either end of the snake using an S-4000 Remote Controller, a PC/Mac, or an RSS V-Mixer.

Expansion, Splits, & Recording

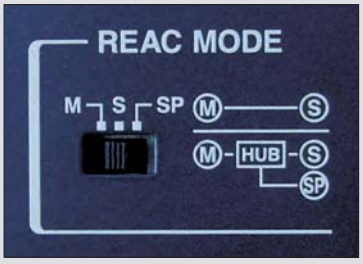
Sometimes sound sources are “split” - sent to multiple locations besides just the Front of House Mixer - to a monitor position, a recording system, a personal mixing system, a webcast and/or a broadcast system. The Digital Snake system inputs can be “split” using standard Ethernet hardware switches providing for multiple “transformerless” audio splits to multiple positions. Since the audio is in the digital domain there is no loss of audio quality when creating a split.
One popular Split is to the REAC Recording System, to enable multi-channel recording. Simply connect a Cat5e cable as a split from the Digital Snake to the Ethernet port on a PC and capture 40 channels of live audio anywhere the Digital Snake is used.
If you need to send audio over a long distance, the RSS S-OPT converts the REAC signal to a fiber optical link for a REAC connection up to 1.2 miles (2km).

Flexibility to Match Your Requirements

The Digital Snake is perfectly matched to the RSS V-Mixing System, RSS V-Mixer Digital Consoles, and the RSS Personal Mixing System. But it also brings great sound improvements and convenience when used with other sound systems. RSS offers a full line of Digital Snake components to build a system that is customized to your needs. See the equipment details in the mini catalog on the facing page.



A basic network setup consists of one MASTER and one SLAVE I/O unit, between which two-way communication is possible. If you want to split the signal, connect a splitter to the MASTER unit and then connect the additional I/O units to the splitter and set their mode switch to SPLIT. The MASTER to SPLIT transmission is one way.



Each I/O unit has a switch for setting the mode. With REAC, there is no need to set an IP address. Simply set the mode switch to construct the network.

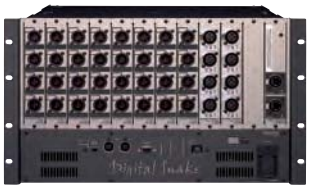
I/O units and peripheral equipment

Configurable up to 40 input and 40 output channels

【I/O modular rack】
S-4000S-3208

32 in/8 out for stage use. All inputs have remote preamp/PAD/phantom power. 24-bit/96kHz AD/DA converters. Audio transmission and power supply redundancy.

【I/O modular rack】
S-4000S-0832



8 in/32 out for FOH I/O unit which is the companion to the S-4000S-3208. All the specifications are the same as the S-4000S-3208, except for the inverted I/O.

【FOH unit】
S-4000H

8 in/32 out FOH I/O unit that uses D-Sub connectors. Specs including the AD/DA converters are the same as the S-4000S-0832, but without preamps.

【I/O modular rack】
S-4000S-MR

This rack can be customized in blocks of 8 channels when combined with the modules from the SI/SO series, which have both analog and digital I/O. Audio transmission and power supply redundancy is possible.

【Analog modules for S-4000S-MR】
SI-AD4

4ch analog input module

SO-DA4

4ch analog output module

【Digital modules for S-4000S-MR】
SI-AES4

4ch AES/EBU input module. Supports 96/48/44.1kHz

SO-AES4

4ch AES/EBU output module. Supports 96/48/44.1kHz with clocking options.

【Stage unit】
S-1608

16 in/8 out multi-box type stage unit. All inputs have remote preamp/PAD/phantom power. 24-bit/96kHz AD/DA converters.

【FOH unit】
S-0816

8 in/16 out multi-box type stage unit. All inputs have remote preamp/PAD/phantom power. 24-bit/96kHz AD/DA converters.

【Remote controller】
S-4000R

Remote controller to control the built-in preamps in the I/O units. Provides gain control setting for each channel and ON/OFF switching of PAD and phantom power. Up to ten setups can be stored in the on-board memory.

【Remote control software】
S-4000RCS

Remote control software for the S-4000 and S-1608 systems, providing the same functionality as the S-4000R. Free download available from the Roland Systems Group website.

【Splitter】
S-4000-SP

REAC splitter to split and extend the network. It has five main and five backup ports supporting audio transmission redundancy. Ethercon design with separate independent power supplies for main and back-up ports.

【Optical converter】
S-OPT

Converter for transmitting REAC through optical cable. Maximum transmittable distance is 2km. Uses Neutrik® OpticalCon Dual LC optical connectors allowing you to connect standard optical cables.

【Redundant External power supply unit】
S-240P

Power supply unit for the S-4000S and S-4000H. Connects to the DC socket of each I/O modular rack. By using AC power, you can achieve power source redundancy.

【REAC cable】
W100S-R

Crossover CAT5e cable. Uses Neutrik® EtherCon connectors. The W100S-R is a reel-mounted 100 meter cable. The SC-W100S is the same length without a reel. The SC-W20F is a 20 meter premium "lay-flat" cable.

SC-W100S

SC-W20F

【Analog multi-cables】
SC-A41C

These multi-cables are convenient for connection to the S-4000H, analog consoles, and other equipment. The SC-A0805DF has eight female XLR connectors and a 25-pin D-Sub connector. The SC-A0805DM has eight male XLR connectors and a 25-pin D-Sub connector. Each cable is 4.5 meters long.

RSS M-400 V-Mixer - Live Digital Mixer

By adding an M-400 to the Digital Snakes of your choice, you get a V-Mixing System with full digital capabilities and total recall. Let's take a look.

A Breakthrough Live Mixing System

The M-400 is a complete digital mixing system that provides the purest sound possible. The system incorporates a digital snake(s) and mixing console in one integrated package.

Main Features

48 mixing channels with 16 Aux buses plus Main L/R/C, channel and bus DSP, 4 dual-mono FX processors, 4 graphic EQs/PEQ, built-in stereo recording and playback, and built in multi-channel split port;
It has a configurable number of Inputs and Outputs based on Digital Snake configurations.

Easy to Use

The V-Mixer is designed to be fast and intuitive to use for the beginner or the experienced professional. It features dedicated knobs and buttons for all console functions, 24 touch-sensitive moving faders, onboard help, large, bright TFT LCD display and Cat5e connectivity for low cost installation and true portability.

Outstanding Sound Quality

The M-400 is a complete digital solution maintaining 24-bit audio from the stage to the splits and back to the stage. Preamps on stage provide the highest possible sound quality and intelligibility. Cat5e snake eliminates the high frequency losses inherent in analog snakes. Onboard digital processing, channel DSP and routing eliminate any chance for buzzes from extra cabling and analog to digital conversion losses. Built-in 24-bit recording provides lossless capture of live events. The Digital Split allows lossless transmission to monitoring, recording or broadcast positions. Bus and Main LR or LRC return over Cat5e enables a complete digital signal path back to the stage.

Powerful Digital Benefits

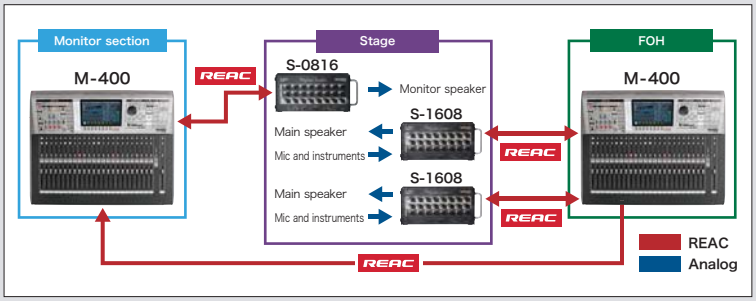
Instantly change from event to event with 300 Scenes for total recall of all mixer, effect and routing parameters. Password level access provides only the relevant controls for any particular type of user. PC software allows loading/saving setups as well as real-time control. Libraries provide the ability for storing custom channel, patchbay and effect settings. Direct to PC recording over Cat5e enables up to 40 channels of direct digital recording.

M-400 Specifications

PROCESSING	
Mixing Channels	48 Channels
Output Mix Busses	Main L/R or LCR 16 Aux, 8 Matrix
Number of Channels	48 Inputs 58 Outputs
Signal Processing	56-bit
Effects	4 Output EQ 31GEQ/8PEQ 18 Output 4 Band PEQ 18 Output Limiters 48 Input Channel EQ 24 Gates 24 Compressors 4 Stereo MultiFX or 8 Mono Real Time Analyzer

CONNECTORS	
XLR Inputs	8 Balanced w. Phantom
Talkback Mic Input	1 Balanced w. Phantom
RCA Inputs	1 Stereo Pair L/R
XLR Outputs	8 Balanced
HeadPhone Output	Stereo 1/4 inch phone
Digital Output	1 Optical, 1 Coaxial
REAC Ports	3 RJ-45 Ethercon REAC A REAC B REAC BACKUP/SPLIT
USB Ports	1 A Type, 1 B Type
Remote Connectors	RS-232C D-Sub 9 Pin MIDI In, MIDI Out/Thru
Other	Lamp

OTHER	
Recording	Stereo Wave to USB Key 40 Channel REAC Option
Help System	Front Panel Help Button
Remote Control	PC, RS-232, MIDI, V-Link
Support Personal Mixing	Control over M-48 Mixers
Scene Recall	Full Recall Whole System
Libraries	Channel, Gate, Compressor, EQ/Filter, Effects, Patchbay
System Updates	Via USB Key



If you take advantage of the three REAC ports and the flexible REAC network, you create a large scale FOH and monitoring system with simple wiring using two M-400s.

M-400RCS remote control software. You can setup configurations and channels ahead of time, save existing projects and adjust any type of mixer setting, recall scenes, load presets, etc.

M-400

Equipped with 48 mixing channels/18 buses/ 8 matrices/56-bit processing

USB Memory Recorder section
Record from two sources directly to a USB memory key inserted in the M-400.

Setup section
Displays the patchbay for assigning input/output or system settings.

Administration
When there are multiple users for the M-400, you can limit the controls available depending on their expertise and customize settings to suit each user.

Display
The high-quality 800×480 pixels TFT color screen is detailed and can be easily viewed outdoors even on bright days.

Talkback/Oscillator
Control the ON/OFF and level adjustment for talkback, and oscillator settings.

Channel Edit section
Dedicated controls for preamp, EQ, filter, gate, compression, AUX, and other settings for the selected channel strip. With the press of a button you can instantly display detailed settings on the LCD. The built-in preamps on the I/O units are remotely controlled.

Monitor section
Adjust monitor levels and settings as well as provide access to management of the Personal Mixing component.

Group section
Displays DCA group and mute group settings.

Fader Module section
Using the layer buttons, switch the 24 faders from channels 1–24 to channels 25–48, and 16-AUX Bus/8-DCA/Matrix Masters. Each channel has SOLO/MUTE and level meters.

Screen Control section
Used for screen navigation.

Scene Memory section
Stores and recalls scenes. 300 scenes can be stored in the internal memory.

Channel Display

Meter

Vintage Effects

Patchbay

8-band PEQ and RTA

Support for Personal Mixing

RSS Personal Mixing System – The Ideal Monitoring Solution

The M-48 Live Personal Mixer is the mixer that performers can use on stage or in the studio to personally mix the monitor balance they like. REAC plays an important role where 40 sources can be assigned to 16 sixteen stereo groups.

Powerful and Personal

The M-48 is a powerful 16 stereo group mixer and is what live performers have been dreaming for in an ultimate monitoring solution. Instead of having to share the same channels on each controller, now each musician can individually decide what sources they want to listen to, how those sources are grouped and in what order. Choosing from 40 sources, each musician can decide what each stereo group will listen to - one source only (mono), a stereo signal or a combination of multiple sources.

The flexibility continues with the ability to adjust source levels, panning, 3-band EQ and built-in reverb sends for a more appealing sound – especially for vocalists. Enjoy numerous outputs including two headphones, balanced lines for powered wedges and tactile transducers for drummers and bassists, as well as recording to MP3 player.

Built-in Ambient Mic

The ambient mic is extremely convenient for mixing in room sound and for communicating with band members without having to remove headphones or in-ear monitors The built-in limiter provides protection from those inadvertent and sudden spikes in volume. The additional AUX input provides the ability to mix a metronome or rehearsal track into your mix.

Crystal clear sound quality is ensured by using the REAC Cat5e protocol, now including REAC Embedded Power, eliminating the need for external wall -wart power at each controller unit. Configurations are straightforward with the ability to control, save and recall all connected M-48s from an M-400 V-Mixer or PC. This allows the FOH engineer or other technical operator to assist in setup and mixing if desired.
Enhance a V-Mixing System by adding M-48 Live Personal Mixers to complement the M-400 V-Mixer Digital Console or use it in conjunction with other digital or analog consoles using RSS Digital Snakes.

Unprecedented Personalization

The M-48 is essentially a 40 channel digital mixer that enables control of those 40 audio sources via 16 stereo groups. No longer do you have to share the same sources in the same order as everyone else. Each musician can choose what he or she wants to listen to – a truly personal mix.

Professional Sound Control and Quality

Sweeten your monitor mix to your exact preferences with volume, pan, 3-band EQ and built-in reverb per group – all instantly adjustable via convenient encoder knobs. A Limiter can be engaged to protect your ears from sudden and dangerous volume spikes. Based on REAC, the all-digital connection results in a low noise floor, improved musicality and crystal clear sound.

Unparalleled Usability

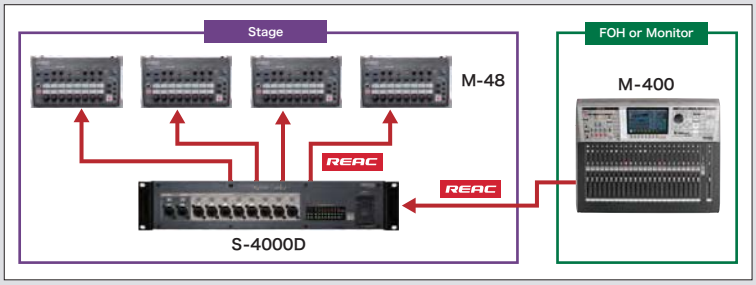
The control knobs with their LED indicators enable instant adjustment and visual confirmation at a glance, even on a dark stage. The built-in ambient mic aids in communicating with other musicians without having to remove your in-ear monitors or headphones as well as enabling a stage/room feel if desired. The AUX input allows mixing in a metronome or other input with the primary sound.
Control, save and recall any connected M-48s from an M-400 V-Mixer or PC allowing the FOH engineer or other technical operator to assist in setup and mixing if desired.

Unparalleled Usability

The newly developed REAC Embedded Power transfers both power and 40 channels of audio to the M-48 via a single CAT5e cable – dramatically simplifying wiring and stage layouts. Mini jack and 1/4 inch phone jack headphone outputs are provided. Balanced TRS line outputs support wedges, wireless transmitters, or other types of powered monitors. An independent stereo output mini jack enables recording with superb sound quality.

The M-48 Live Personal Mixer is a breath of fresh air for live performers giving them full control over their personal monitor mix. Truly professional. Truly personal.

The M-48 can be attached to a mic stand using a mounting bracket. LED equipped encoders are ideal for easy operation in darkened venues.



The diagram above shows an example of an M-400 setup with a Personal Mixing System. The S-4000D splitter can send power to the M-48s and is connected via a CAT5e cable. Up to eight units can be connected to a single S-4000D.

M-48

Equipped with reverb and ambient mic The innovative personal mixer

Memory section
Store and instantly recall 16 setups in the unit

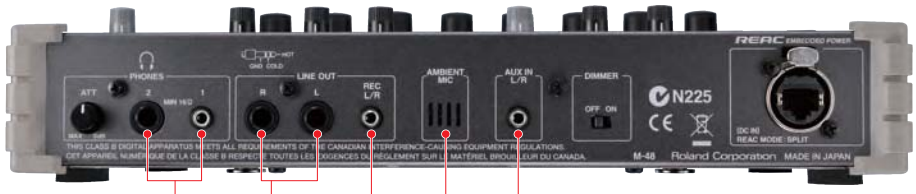
AUX in/Ambient Mic section
Separately adjust an external input volume level and the ambient sound level picked up by the unit's built-in mic

Line Out section
Controls the volume level being sent out the separate balanced line out jacks.

Headphone section
Select REVERB ON/OFF, adjust headphone output EQ, control LIMITER and VOLUME level

Control
The Control buttons allow adjustment of the VOLUME, PAN, REVERB SEND and 3-band EQ for each of the sixteen stereo groups.

Rotary Encoders section
Equipped with eight rotary encoder knobs with LEDs. Use the layer buttons to switch between stereo groups 1–8 or 9–16.



Headphone jacks
Miniature and standard phone jacks are provided along with attenuation.

Line Out jacks
The stereo line out TRS balanced phone jacks can be connected to floor monitors, bass shakers or to a wireless transmitter.

Rec Out jack
The stereo miniature jack is provided for portable recorders.

Ambient mic
This built-in mic is extremely convenient for mixing in room sound and for communicating with band members without having to remove headphones or in-ear monitors.

AUX IN jack
This convenient external input can be used for a metronome etc.

S-4000D

A REAC Splitter that supplies audio and embedded power to each M-48 Live Personal Mixer

REAC connector
These are the standard REAC connectors to connect the M-400 and Digital Snake I/O units

REAC connector (REAC Embedded Power)
Power for up to eight devices. Connect any RSS snake or personal mixing product and automatic sensing detects if power is required.

Recording the Live Event

The advantages of REAC also extend to live recording. One REAC cable enables recording of up to 40 channels. Simply plug a CAT5e cable into a computer installed with Cakewalk SONAR PRODUCER and capture the live feed.

Producing live recordings

Many users need to record live material that is quickly turned around into CDs or uploaded to the Internet. Not long ago, recording at a live event commonly involved using a room or truck full of recording equipment. The configuration required using transformer-based splitters to split the audio cables leading from the multi-box stations by the stage in order to send the audio signals to the recording point. At that point, thick multi-core lines would be run to the record position, all of which involved a high cost in installations and a lot of manual labor in portable setups.
REAC offers the solution to produce live recordings easily and inexpensively.

Onboard Stereo Recording

The RSS V-Mixer has a built-in USB stereo recorder/player. Using a USB memory drive, linear WAV files can be recorded or played back. Effortlessly capture a live stereo mix from the MAINs or from an AUX bus. When completed, pull the memory drive out and simply plug it into a CD duplicator or compress/upload to a website.

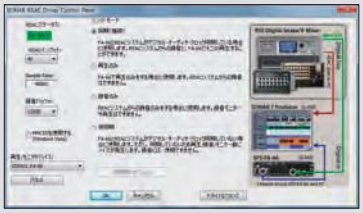
Live Multi-channel Recording

If you want to go beyond stereo recording and production built into the V-Mixer or if you are using an RSS Digital Snake, the V-Mixing System has two options for multi-channel recording and production.

The SONAR REAC Recording System, when used in conjunction with the RSS V-Mixing System or RSS Digital Snakes, provides the a comprehensive live recording, mixing, editing, mastering and delivery solution. Simply connect a REAC split from your system to the gigabit network port on an appropriately configured PC. The REAC driver enables users to record 40 channels from their Digital Snake/V-Mixing System directly into SONAR. Record 40 independent tracks of individual channels or sound sources. Edit that captured audio, mix down, and you have a final product ready for distribution. SONAR helps you distribute your recording with a full suite of tools for mastering to CD or direct delivery to your web site.
The SONAR REAC Recording System includes:
SONAR Producer
REAC Driver Kit
EDIROL FA-66 Monitoring Device
SONAR Templates
Users Guides

The SONAR V-Studio 700 REAC Edition is the ultimate recording solution for use with REAC systems. Like the above configuration the SONAR V-Studio also consists of SONAR Producer, but additionally the software is intelligently matched with state-of-the-art hardware that meets Roland's high standards of quality and reliability. It includes the VS-700C V-STUDIO Console multifunction control surface and VS-700R V-STUDIO I/O audio interface.
Taken as a whole, SONAR V-STUDIO 700 offers the “tactile feel” of working in a traditional studio, but in a way that takes advantage of everything modern technology has to offer. Striving to create the ideal music production environment, Cakewalk and Roland have built the ultimate DAW Digital Audio Workstation integrated with high-end tools.
Used in conjunction with the RSS V-Mixing System or RSS Digital Snakes the REAC Edition of the SONAR V-STUDIO 700 provides the most comprehensive live recording, editing, mixing, mastering and delivery solution available. REAC driver technology enables users to record up to 40 channels of audio from an RSS V-Mixing System or RSS Digital Snake directly into a PC using a single Ethernet cable.
Cakewalk and Roland selected only the very best components in designing SONAR V-STUDIO 700. At the heart of the system is SONAR Producer, the leading DAW in the market today. SONAR Producer gives you everything you need for recording, composing, editing, mixing, mastering, and delivery. Cakewalk's flagship instruments, Dimension Pro (included in SONAR Producer) and Rapture, are also part of the software package.
The software is intelligently matched with state-of-the-art hardware that meets Roland's high standards of quality and reliability. It includes the VS-700C V-STUDIO Console multifunction control surface and VS-700R V-STUDIO I/O audio interface which has an integrated Roland Fantom VS hardware synthesizer based on the world-renowned Fantom synthesizer.
The system represents the best that software and hardware have to offer with amazing control, integration, and sound quality.

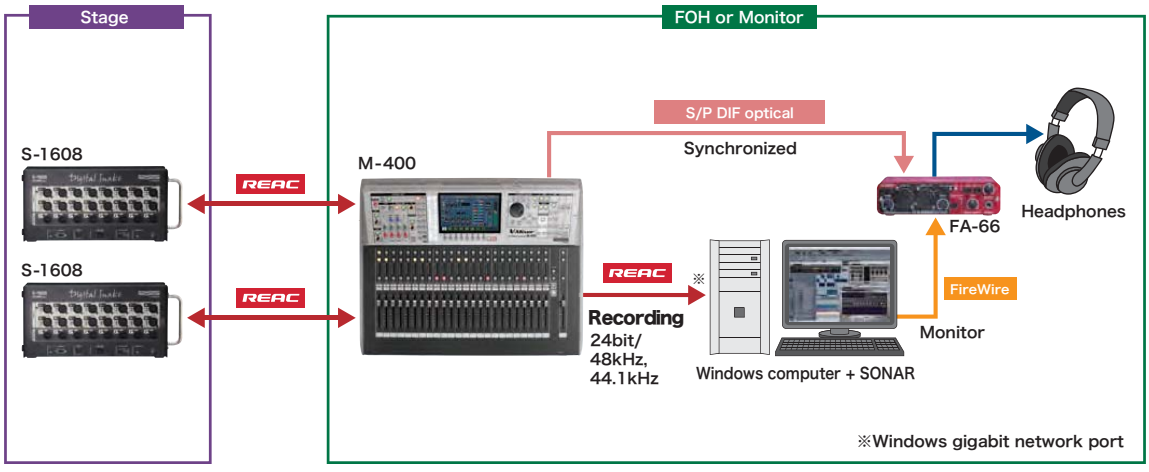
SONAR PRODUCER is the flagship Digital Audio Workstation software from Cakewalk.
It includes a multitude of effects and is capable of professional-quality mixing, mastering, and delivery.



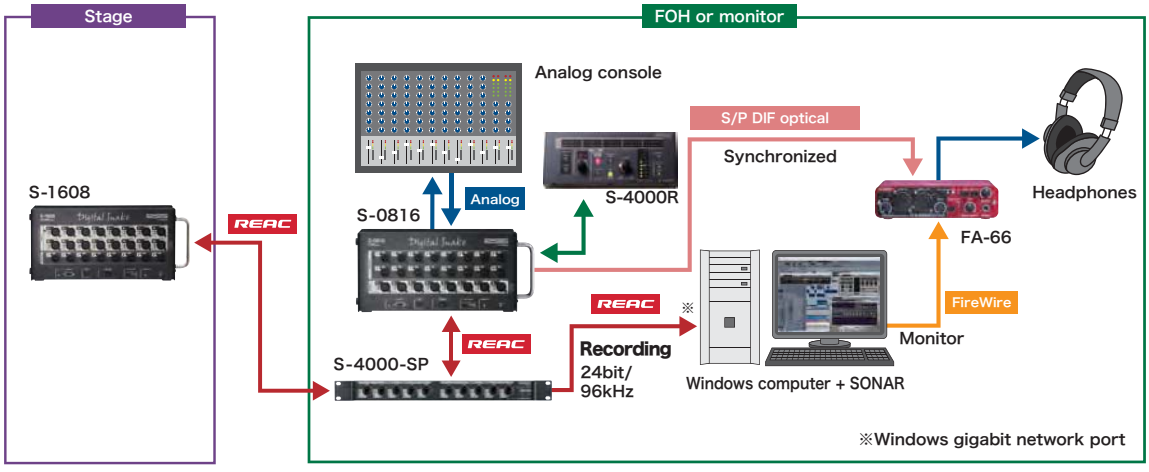
Installing the REAC driver allows SONAR PRODUCER to record up to 40 channels of audio over a gigibit ethernet port.

▲Photo 1: The EDIROL FA-66 Firewire audio interface allows you to monitor audio from the REAC network.

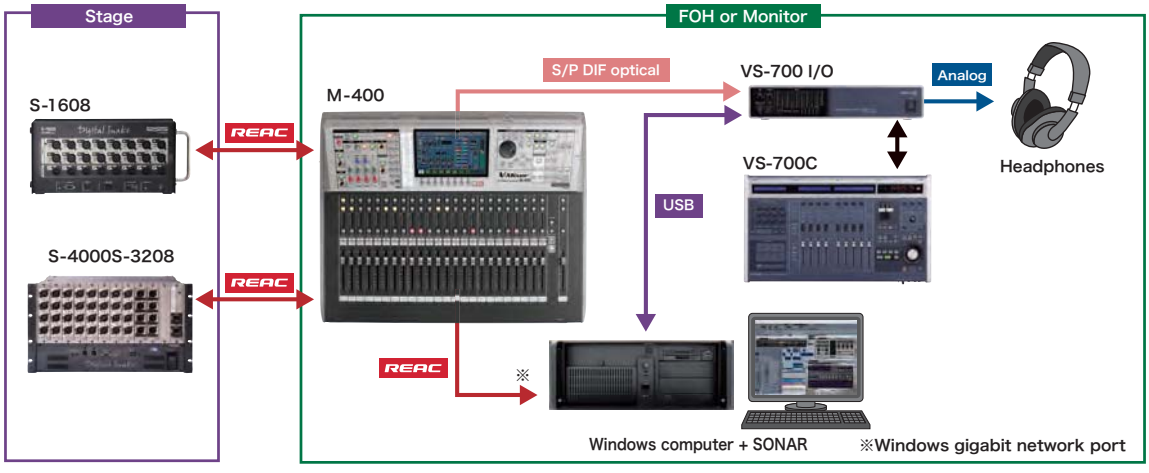
Recording with the Standard V-Mixing System — 40-channel recording



Recording with the S-1608 Digital Snake — 16-channel recording



Recording with the Expanded V-Mixing System — 40-channel recording



Installation report ❶

BBC Radio Theatre

RSS M-400 DIGITAL MIXING SYSTEM PLAYS TO THE CROWD IN LEGENDARY RADIO STUDIO

Installed Products

V-Mixing System

V-Mixer M-400

S-4000S-3208 Digital Snake

Introduction

One of the final components in an extensive technical refurbishment of the BBC's largest radio studio, the M-400 V-Mixing System from RSS by Roland has been installed in the broadcaster's famous Radio Theatre in London's Broadcasting

As part of a larger building programme, the Radio Theatre has been refurbished and fitted out for a wide range of audience shows, primarily but not exclusively output to radio, including light entertainment productions, comedy, Christmas specials and one-off events. The venue for many historic recordings since the 1930s when it was known as the BBC Concert Hall, today the theatre's 312-seat auditorium has been equipped with extensive PA and lighting facilities, and includes an 80-track digital recording facility.

The System

The RSS M-400 digital mixing system has the job of mixing the two PA systems in the theatre, a d&b compact line array and a distributed speech system. More than 100 mic inputs are sent from stage via MADI to the main control console for the on-air broadcast mix. From the stagebox, a smaller selection of 40 inputs is split to the RSS S-4000 Digital Snake stage unit, travelling up CAT5E digital multicore to the M-400 console, where these inputs are used for the front-of-house sound mix, and providing up to 8 foldback mixes if required. The system configuration permits the use of a second M-400 as a monitor console, currently seconded from a BBC multimedia events team.

Application

“The Roland M-400 was chosen for its powerful features and high quality mic pres,” explains Peter Knowles of Total Audio Solutions, who started his career at Broadcasting house some 25 years ago. “Digital consoles of this type are ever-flexible tool boxes that can recall complex setups in seconds. The Roland can distribute its remote mic pres many times over.”

With the M-400 halving the physical footprint of the previous analogue console used in the Theatre, and the RSS Digital Snake 32x8 stage unit and 8x32 front-of-house unit fitting into a single 12U rack, the system is suitably compact and portable for an environment that has limited space. “If necessary, we can strike the system really quickly,” says Events Manager Mark Diamond. “With some Radio OB vehicles using the same Snakes and M-400 consoles, we can turn up at very short notice and provide broadcast splits fast.”

A contributor to Roland's customer research on feature upgrades, Diamond has recently loaded the new Version 1.5 software onto the M-400, and reports that the console is now more flexible, notably with the ability to move 24 gates and 24 compressors more freely. The free software upgrade also includes numerous user interface enhancements for accelerated workflow and ease of use.

The M-400 is a 48-channel M-400 Mixing Console with 16 buses, channel and bus DSP, 4 stereo FX processors, 4 graphic EQs, built-in stereo recording and playback, and built in multi-channel split port. It is supplied with configurable digital snakes using high quality, remotely controlled mic preamps on stage, and low-cost lightweight Cat5e distribution.

Installation report❷

Concerts Unlimited

▲V-Mixer at Corporate Event

Installed Products

V-Mixing System

Expanded System

V-Mixer M-400

S-1608 Stage Unit

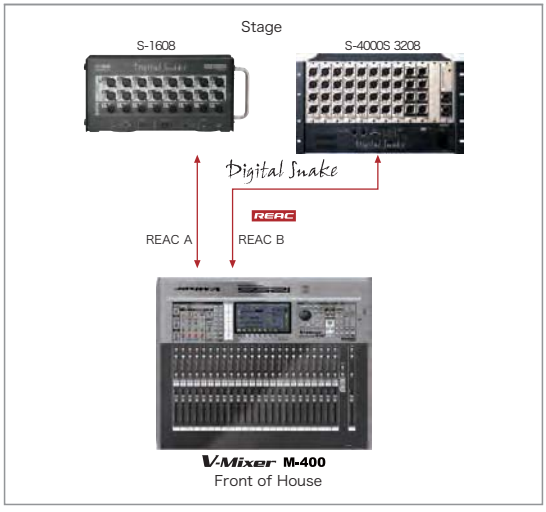
S-4000S-3208 Stage Unit

Introduction

Concerts Unlimited LLC, founded in 2005 is a provider of production services and equipment sales serving the New England region in the US. They pride themselves in providing the highest quality of sound, lighting, and video service with the newest equipment and best crew possible. They stared out with an analog Mackie console with JBL speakers and some QSC series 3 amplifi ers from way back in the day.

System Integration

Silas Pradetto, principal and owner of Concerts Unlimited, overseas every project and ensures that the production quality is at the highest level. Pradetto explains, “We are doing tons of shows per year, and the company is expanding at a breakneck pace”. Due to the nature of the production company with lots of different type of needs from concert and corporate events to live TV broadcasts and recording sessions, they needed a system that was rugged, easy to use, and easy to setup. Pradetto explains, “The top three things that sold me on the V-Mixing system versus any other digital mixing system were the sound quality, reliability, and the integrated digital snake.” The V-Mixing System is very unique to other consoles in that it offers an integrated digital snake system which provides exceptional sound quality and a cost effective way to get audio from the stage to the FOH position with simply two Cat5e cables.



The System

Below is a typical setup for the Concerts Unlimited crew on most shows and events. The two stage boxes sit on stage. The S-1608 goes near the drum riser, and the S- 4000 goes on stage left or right out of sight. The S-4000 is configured as 24 inputs, 12 analog outputs, and 4 AES digital outputs. The inputs get sent to the M-400 at FOH where they're mixed and sent back to the outputs on the S-4000. The AES digital outputs feed the AES inputs of a dbx® Driverack 4800, while the analog outs feed the mixes and fills. The Driverack feeds the I-Techs through AES digital cables, keeping the signal chain digital from preamp to amplifier, with no intermediate stages of AD or DA conversion. If there's ever a need for a monitor console, another M-400 is brought in and split off the two stage boxes with network switches.

Application

Pradetto loves his job, the V-Mixing System, and the service that Roland Systems Group provides. Pradetto says, “The system has made a vast improvement in the speed of system deployment and the sound quality of the setup. It also conserves a ton of space compared to our old analog setup. Roland Systems Group really cares about their users—they listen to us to see what we want in the system and integrate it in new firmware. The service and support are excellent and most of all, the system sounds fantastic.” Speed, reliability, and sound quality are at the heart of the V-Mixing System. The V-Mixing System has enabled Concerts Unlimited to expand their services they provide, improve sound quality, and minimize the labor involved in setup and teardown.

▲CU Crew at Outdoor Festival

▲V-Mixer at Church Event

▲V-Mixer at Concert Event

Installation report ❸

The ease of use convinces a self-confessed 'old analog guy'

Ford Field is a multipurpose stadium located in Detroit, Michigan, which is also the home of the NFL Detroit Lions. Besides football games and other sporting events, this stadium has also hosted concerts by the Rolling Stones, Madonna, and Eminem, etc. 150 power amps and 184 cluster speakers are permanently installed, and the V-Mixing System is at the heart of this audio system.

Installation report ❹

Best choice for an opera theater

The National Theater of Poland, Teatr Wielki [Great Theater], was built in the nation's capital of Warsaw in 1910. It is the finest opera theater in Poland and now annually hosts 40 operas and 15 ballet performances. The world-renowned venue has featured many distinguished soloists and new projects are constantly being added. The V-Mixing System installed in this theater includes the M-400, an S-4000S-3208, and an S-1608.

Installation report❺

Flexibility to handle large scale events

More than a million people turned out to see Pope Benedict when he visited Spain. A PA system utilizing 950 speakers that were stretched out over a distance of 20km was installed to handle this huge event. This complex venue covering such a long distance required a system that could provide clear sound. The Digital Snake provided the solution. Oscar Fragio of Apogee-Telecom was in charge of managing the PA for

Ford Field

The system includes the S-4000S-3208 and S-1608 stage units along with two M-400 consoles, one of which serves as a backup unit. The reasons for installing this system were the ease of use and excellent cost performance. Mark Simoni, the mixing engineer for Lions games, admits to being an 'old analog guy.' After testing the M-400 alongside other digital consoles, he and the staff concluded that they could operate the M-400 with confidence. Improved sound quality and the power to control a variety of situations are among the many advantages of this system. Simoni also points out the ease of use, and added, "Everything is just a button push away. The V-Mixing System is not intimidating and it invites you to put your hands on it."

The V-Mixing System was a compelling choice that even convinced a self-confessed 'old analog guy,' with its ease of use.

◀Ford Field is the home of the NFL Detroit Lions

▶The stadium hosts a variety of events from sports to concerts

Polish National Opera

It also support REAC recording with SONAR by Cakewalk. 24 microphones are connected to the S-4000S-3208, which is also used for output to the speakers. The S-1608 is used for wireless system input, and the analog inputs and outputs of the M-400 are connected to a CD player and external gear, etc.

Krystian Kołakowski explained the reasons for and benefits of installing the system:

"We selected the V-Mixing System because we wanted to consolidate several different consoles into one system. As a result, we were able to install a high quality audio mixing system at an affordable price. Another advantage was REAC, which enables high quality multi-track recording with this system."

The high-quality sound of the V-Mixing System made it the optimum choice for the dignified stage of this opera theater.

▲The National Theater of Poland 'Teatr Wielki' features two auditoriums and a museum

The 5th World Meeting of Families

this event. He told us why they chose the V-Mixing System. "We selected this system for its flexibility, ease of operation and system security. The fact that the system is simple and provides a high quality stable sound, matched the fundamental philosophy of our company."

Albert Naranjo, also with Apogee-Telecom, spoke highly of the Digital Snake. "Setup was very easy thanks to the flexibility of the Digital Snake. If we had used another system, it would have been more complicated. With such a large scale installation, the advantage of using the Digital Snake is unlimited. It completely satisfied all of our requirements and expectations."

High quality sound is a must, but having quick and flexible response from setup to troubleshooting is required to meet the needs of any complex and large scale audio system. The REAC concept is both simple and powerful, and this installation demonstrates how REAC can meet these needs.

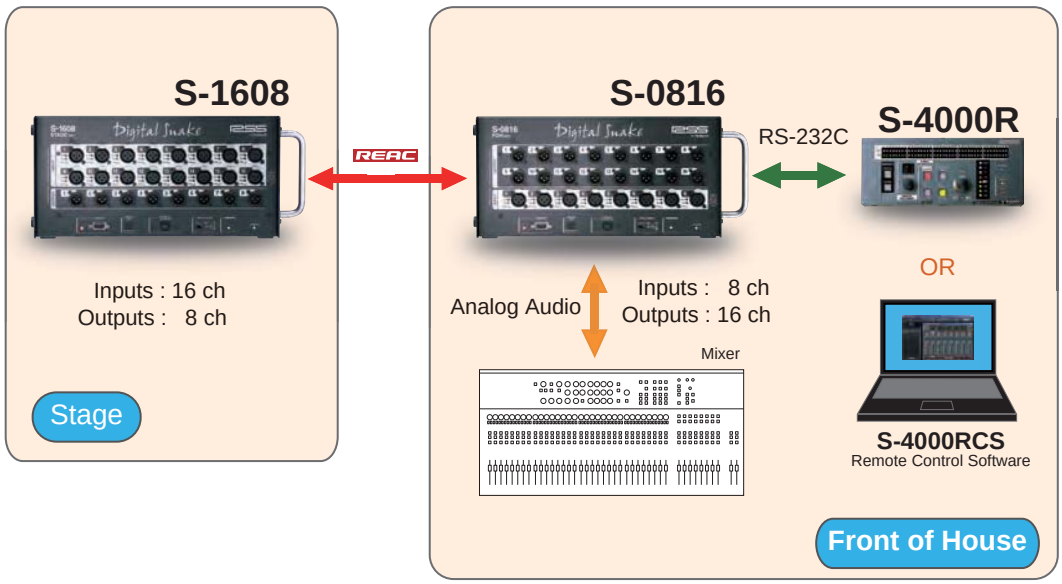
◀A picture of the customized setup using a rack mounted S-4000S I/O module

※The same system was used for a similar event held in Brazil.

System Configuration Examples

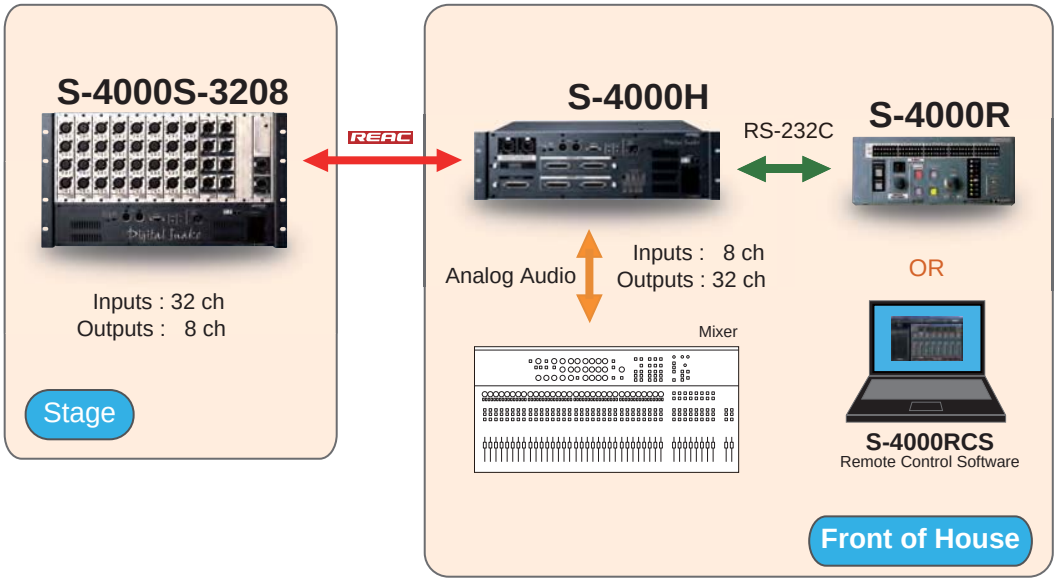
16x8 Digital Snake System

16 Inputs (Digital Snake)
8 Outputs (Digital Snake)



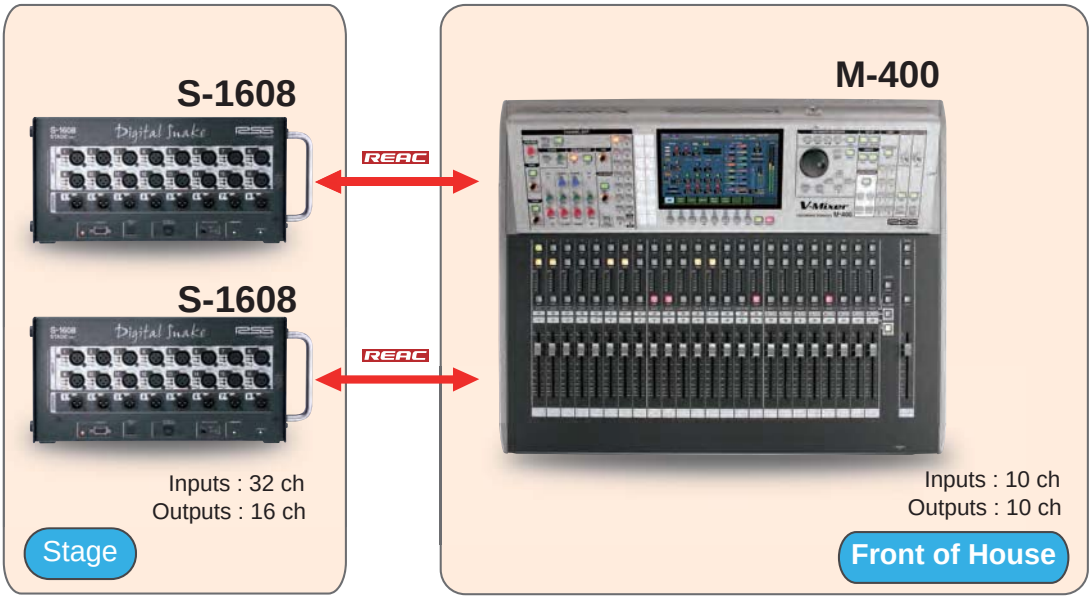
32x8 Digital Snake System

32 Inputs (Digital Snake)
8 Outputs (Digital Snake)



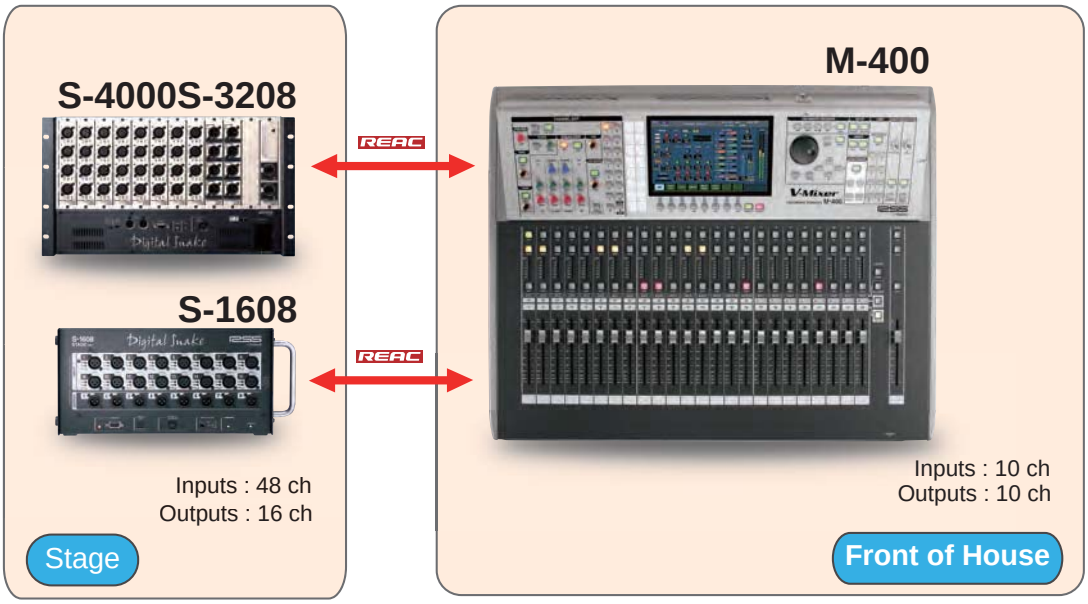
Standard V-Mixing System

42 Inputs : 32 ch (Digital Snake) + 10 ch (M-400)
26 Outputs : 16 ch (Digital Snake) + 10 ch (M-400)



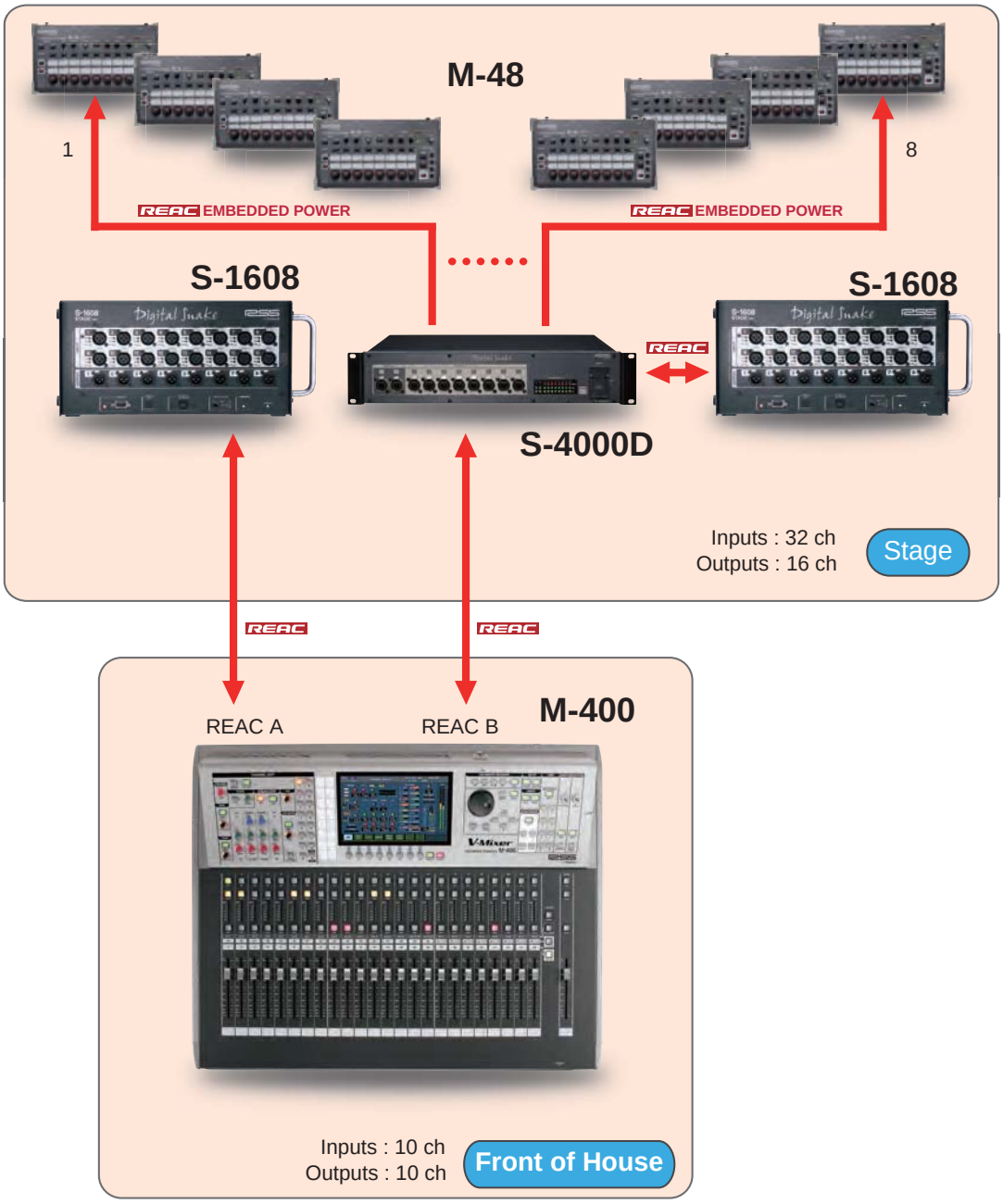
Expanded V-Mixing System

58 Inputs : 48 ch (Digital Snake) + 10 ch (M-400)
26 Outputs : 16 ch (Digital Snake) + 10 ch (M-400)



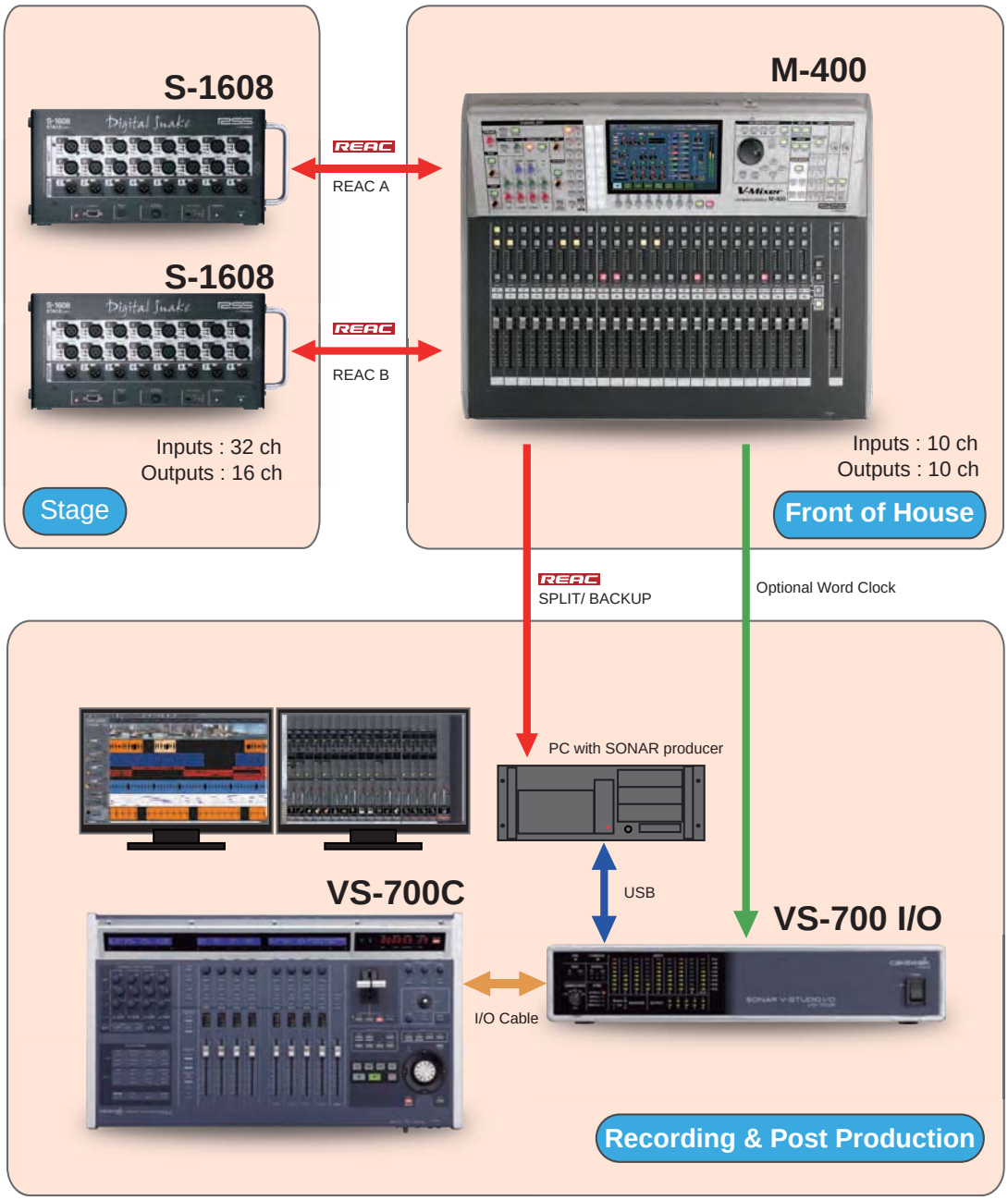
Standard V-Mixing System with Personal Mixing

42 Inputs : 32 ch (Digital Snake) + 10 ch (M-400)
26 Outputs : 16 ch (Digital Snake) + 10 ch (M-400)
Personal Mixers : Up to 8 x M-48 per S-4000D (Connect multiple S-4000Ds inline to enable more M-48s)



Standard V-Mixing System with REAC Recording

42 Inputs : 32 ch (Digital Snake) + 10 ch (M-400)
26 Outputs : 16 ch (Digital Snake) + 10 ch (M-400)
Record Split : 40 ch



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photo：Cover ／ Hiroki Obara、P14 ／ Shunsuke Nakanishi、P15 ／ Takashi Yashima
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